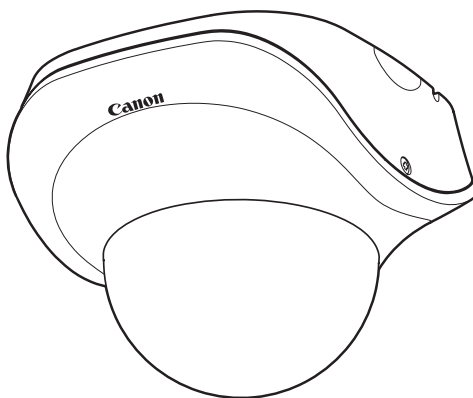


Network Camera**VB-C500D**

Start Guide**ENG**

Please read carefully this *Start Guide* and the *Operation Guide*. Especially be sure to read "Safety Precautions" before using the network camera. Keep this guide in a readily accessible location for future reference.

Introduction

Thank you for purchasing Canon Network Camera VB-C500D (hereafter referred to as VB-C500D).

This *Start Guide* describes how to set up and install the VB-C500D. The detailed procedures for using the VB-C500D are explained in the *Operation Guide* provided on the Setup CD-ROM. Read these guides carefully before using the VB-C500D to ensure that you make the best possible use of this product. Also, be sure to read "Safety Precautions" in this guide.

For the latest information on this product (firmware, bundled software, operation manuals, operating environment, etc.), visit our website.

Disclaimer

Canon Inc. shall not be responsible for any financial losses that may be incurred as a result of the loss of recorded information or images, regardless of the internal or external cause of the loss.

Copyright

Videos, images or sounds recorded with your VB-C500D may not be utilized or published, without consent of copyright holders, if any, except in such a way as permitted for personal use under the relevant copyright law.

Notes

1. All rights reserved.
2. The contents of this guide are subject to change without any prior notice.
3. This document has been prepared with utmost attention to accuracy. If you have any comment, however, please contact the Customer Service Center indicated on the back cover.
4. Canon shall assume no liability for any outcome of using this product, regardless of Items 2 and 3 above.

Notes on privacy and publicity rights regarding the utilization of video/audio

When using the VB-C500D (for video or audio recording), it is the responsibility of the users to take all care to protect privacy and avoid any violation of publicity rights. Canon shall have no liability whatsoever in this regard.

Reference

- Please be sure to gain approval of the building management office before installing a camera, if copyrighted architectural structures or copyrighted premises are appear in the frame.

Legal Notice

In some countries or regions, monitoring via a camera is banned by the law or regulation, and the law or regulation depends on the country or region. Before using the VB-C500D, confirm the law or regulation of the country or region where the camera is used.

Trademark Notice

- Canon and the Canon logo are registered trademarks of Canon Inc.
- Microsoft Windows and Microsoft Internet Explorer are trademarks or registered trademarks of Microsoft Corporation in the United States and other countries.
- Windows is legally recognized as the Microsoft Windows Operating System.
- Other brands or product names in this guide are trademarks or registered trademarks of their respective companies.



Warning

To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture.


Notes on Use of Bundled Software VK-Lite (Disclaimer)

Malfunction, failure of VK-Lite or other factors may cause problems, such as recording failure, recorded data corruption or loss. Canon shall have no liability whatsoever for any loss or damages incurred by the user as a result of such problems.

European Union (and EEA) only.



These symbols indicate that this product is not to be disposed of with your household waste, according to the WEEE Directive (2002/96/EC), the Battery Directive (2006/66/EC) and/or your national laws implementing those Directives.


 This product should be handed over to a designated collection point, e.g., on an authorized one-for-one basis when you buy a new similar product or to an authorized collection site for recycling waste electrical and electronic equipment (EEE) and batteries and accumulators. Improper handling of this type of waste could have a possible impact on the environment and human health due to potentially hazardous substances that are generally associated with EEE.

Your cooperation in the correct disposal of this product will contribute to the effective usage of natural resources.

For more information about the recycling of this product, please contact your local city office, waste authority, approved scheme or your household waste disposal service or visit www.canon-europe.com/environment.

(EEA: Norway, Iceland and Liechtenstein)

MPEG-4

NOTICE ABOUT THE MPEG-4 VISUAL STANDARD: THIS PRODUCT IS LICENSED UNDER THE MPEG-4 VISUAL PATENT PORTFOLIO LICENSE FOR THE PERSONAL AND NON-COMMERCIAL USE OF A CONSUMER TO (i) ENCODING VIDEO IN COMPLIANCE WITH THE MPEG-4 VISUAL STANDARD ("MPEG-4 VIDEO") AND/OR (ii) DECODING MPEG-4 VIDEO THAT WAS ENCODED BY A CONSUMER ENGAGED IN A PERSONAL AND NON-COMMERCIAL ACTIVITY. NO LICENSE IS GRANTED OR SHALL BE IMPLIED FOR ANY OTHER USE. ADDITIONAL INFORMATION INCLUDING THAT RELATING TO PROMOTIONAL, INTERNAL AND COMMERCIAL USES AND ADDITIONAL LICENSING MAY BE OBTAINED FROM MPEG LA, LLC. SEE [HTTP://WWW.MPEGLA.COM](http://www.mpegla.com).

This product is licensed under AT&T patents for the MPEG-4 standard and maybe used for encoding MPEG-4 compliant video and/or decoding MPEG-4 compliant video that was encoded only (1) for a personal and non-commercial purpose or (2) by a video provider licensed under the AT&T patents to provide MPEG-4 compliant video. No license is granted or implied for any other use for MPEG-4 standard.

Third Party Software

The product (VB-C500D and bundled VK-Lite Viewer) contains third party software modules. For detail information, please see ReadMe-E.txt on the supplied Setup CD-ROM. Each module's license conditions are also available in the License folder on the same Setup CD-ROM.

Software under GPL and LGPL

If you would like to obtain the source code under GPL/LGPL, please contact the dealer where you purchased the product, or a sales agent.

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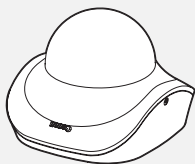
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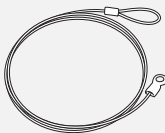
Checking of Bundled Items

This product comes with the following items. If any item is missing, contact the store where you purchased the product.

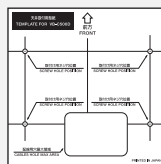
1. VB-C500D main Unit



2. Safety wire



3. Ceiling mount template



4. Setup CD-ROM



5. Start Guide (This document)

6. Warranty Card (different depending on the region)

Content of Setup CD-ROM

ReadMe-J.txt	: Japanese text covering notes, etc. not included in this document
ReadMe-E.txt	: English text covering notes, etc., not included in this document
Manual	: Folder containing operation manuals (Japanese, English) other than this document *
VBTools	: Folder containing the installers for other bundled software (two installers specified below)*
VBToolsInstall.exe	: Installer for VB Initial Setting Tool and VBAdmin Tools*
VKLiteInstall.exe	: Installer for Network Video Recorder VK-Lite*
License	: Folder containing licenses for the built-in software of the VB-C500D as well as bundled software VK-Lite
Sound	: Folder containing sample audio files

* Check our website for the latest versions of bundled software and operation manuals.

Operation Manuals

The VB-C500D comes with *Start Guide* (this document) and *Operation Guide* included in the Setup CD-ROM.

Start Guide (This Document)

The safety precautions to be followed when using the VB-C500D, types of bundled software, operating environment, installation method, initial setting of the camera, installation method, etc., are explained.

Operation Guide (VBC500DOG_E.pdf)

This document explains the basic setup procedure for the VB-C500D, how to use VBAAdmin Tools and VB-C500 Viewer, troubleshooting, etc. Items that should be referenced in this document are denoted by "Operation Guide."

Operation Guide is included in the Setup CD-ROM.

Also, a simplified version of recording software **VK-Lite** (→ P. 1-6) is stored in the Setup CD-ROM. The following operation manuals are available:

Setup Guide (VK21SUG_E.pdf)

This document explains the items to note when using VK-Lite, operating environment, system configuration, installation method and setup method.

Administrator's Manual (VK21AM_E.pdf)

This document explains details on how to use VK-Lite. Be sure to read this document.

Viewer Operation Guide (VK21VOG_E.pdf)





This is an operation guide for the VK-Lite viewer. For the detailed operating procedures of the viewer, refer to *Administrator's Manual*.

How to Read This Document

In *Start Guide* and *Operation Guide*, screens in Windows Vista are mainly used. Unless otherwise specified, the same screens apply to Windows XP.

Symbols Used for Safety Precautions

In this document, the following symbols are used to indicate important items the user should know to use this product safely. Be sure to observe these items.

Symbol	Meaning
 Warning	Inappropriate handling against the instruction accompanied by this symbol may result in death or injury. Be sure to observe this precaution to use the product safely.
 Caution	Inappropriate handling against the instruction accompanied by this symbol may result in injury. Be sure to observe this precaution to use the product safely.
Note	Inappropriate handling against the instruction accompanied by this symbol may result in property damage. Be sure to observe these precautions.
 Note	This symbol indicates other action or item that requires attention.
 Tip	Supplementary information or a reference to the operation is explained. Users are recommended to read these memos.

Safety Precautions

The following explains the items that must be observed when using the VB-C500D.

If they are not observed, injury, death and/or property damage may occur. Read the following information carefully and observe the instructions without fail.

Important Warnings

CAUTION

TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

For optional PA-V17 Users in the UK

When replacing the fuse only a correctly rated approved type should be used and be sure to re-fit the fuse cover.

The AC adapter can be connected to VB-C500D from a standard AC power outlet. Please check your instruction manual to make sure that your VB-C500D is compatible with this adapter.

- The socket-outlet should be installed near the equipment and should be easily accessible.
- Unplug the equipment from the wall outlet before cleaning or maintaining.

FDA regulation

This Network Camera has not been evaluated by the Food and Drug Administration (FDA) for use as a medical device. When incorporated into a system with medical applications, FDA regulations may apply. Therefore, please consult your legal advisor to determine whether FDA regulations apply.



FCC NOTICE

Network Camera, Model Name: VB-C500D

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Use of shielded cable is required to comply with class B limits in Subpart B of Part 15 of FCC Rules.

Do not make any changes or modifications to the equipment unless otherwise specified in the manual. If such changes or modifications should be made, you could be required to stop operation of the equipment.

Canon U.S.A. Inc.

One Canon Plaza, Lake Success, NY 11042, U.S.A.

Tel No. (516) 328-5600

Canadian Radio Interference Regulations

This Class B digital apparatus complies with Canadian ICES-003.

Precautions for Installation



Warning

Do not install the product in the following places:

- Place receiving strong direct sunlight, near heat generating objects, or subject to high temperature
- Place near fire sources or flammable solvents (alcohol, thinner, etc.)
- Humid or dusty place
- Place subject to lamp black or steam
- Place subject to sea wind
- Narrow, sealed place

Fire or electric shock may result.

Note

For installation or inspection of the VB-C500D, consult/request the store where you purchased the product.

- Wire the VB-C500D power supply, network, or other cables safely and securely according to the relevant regulations such as technical standards for electrical installations.
- When installing the VB-C500D, select a ceiling surface, etc., capable of withstanding the total weight of the camera and all options used (Recessed Mounting Kit), provide sufficient reinforcements and use the bundled safety wire if necessary.
- To prevent injuries and equipment damage due to falling items, periodically check the brackets and screws for rusting and loosening.
- Installation in a place subject to significant vibration is not recommended, because it may cause the equipment to malfunction.
- Do not install the VB-C500D on an unstable or inclined surface.
- Do not carry the product while the LAN cable or other cables still connected to it.

Malfunction may occur.

Precautions for Use



Warning

- If smoke, abnormal noise, heat, odor or any other abnormality is detected, immediately stop using the camera and contact your nearest Canon dealer.

Continuing to use the product may result in fire or electric shock.

- Do not disassemble or modify the camera.
- Do not put water or other liquid in the camera or splash or otherwise wet the camera.
- Do not put foreign objects in the camera.
- Do not use sprays of flammable gases near the camera.
- When the camera is not used for a long period, disconnect the LAN cable, external power supply and power connector for AC adapter (optional) from the camera.

Fire or electric shock may result.

Note

- Do not use this camera for medical devices and other systems that affect human life.

Delayed or missing image transmission may occur depending on the PC and network environment, and thus high image transmission accuracy cannot be assured.

Canon will assume no liability for any accident or damage resulting from use of the VB-C500D in the aforementioned devices or systems.

- Do not capture the sun, halogen lamps and other very bright light sources or subjects.
- Do not apply impact on the camera.

Malfunction may result.

This installation should be made by a qualified service person and should confirm to all local codes.

Notes on Use of Motion Detection, Stream for Recording and Bundled Recording Software VK-Lite

Note

- Avoid using Motion Detection, Stream for Recording or recording software VK-Lite for surveillance where very high level of reliability is constantly required.

These are support functions for monitoring. They do not guarantee monitoring with very high accuracy, however, as they might not work as accurately as expected under certain conditions. Canon will assume no liability for any accident or damage resulting from use of these functions.

Precautions for Use of Optional AC Adapter PA-V17



Warning

- Do not use any AC adapter or AC cable other than the dedicated AC adapter or AC cable.
- Do not put heavy objects on the power cable.
- Do not pull, forcibly bend, scratch or modify the power cable.
- Do not cover or wrap the AC adapter (optional) with a cloth or thick cotton blanket.

Fire or electric shock may result.

Be sure to read the operation manual for PA-V17 before use.

Notes on Cleaning



Warning

- Do not use alcohol, thinner, benzene or any other flammable solvent.

Fire or electric shock may result.

Maintenance

Turn off the power before cleaning the camera (→ P. 2-7).

■ Cleaning of Exterior

1. Dampen a soft cloth with water or diluted neutral detergent and wipe the soiled areas gently.
2. Wipe with a dry cloth.

■ Cleaning of Lens

Use a commercial lens cleaner to remove soiling on the lens surface.

- Scratches on the lens surface may result in undesirable images.

■ Maintenance for Dome Case

A soiled dome is a cause of poor image quality, so clean the dome periodically.

1. Remove the dome by referring to "Installation Procedure for Direct Mounting on a Ceiling/Wall" (→ P. 2-16) in Chapter 2, "Initial Setting and Installation of Camera".
2. Dampen a soft cloth with water or diluted neutral detergent and wipe the soiled areas gently.
3. Wipe with a dry cloth.
4. When you are done, install the dome case.

To prevent injuries and equipment damage due to falling items, periodically check the brackets and screws for rusting and loosening.

For checkups, please contact the dealer where you purchased the product.

■ Maintenance for Recessed Mounting Kit (Optional)

To prevent injuries and equipment damage due to falling items, periodically check the brackets and screws for rusting and loosening.

For checkups, please contact the dealer where you purchased the product.



Before Use

The following explains the features of this camera, bundled software, operating environment, and name and function of each part.



Features of VB-C500D

The VB-C500D is a compact network camera for indoor installation integrating camera and server features.

■ Wide-angle Varifocal Lens

Equipped with a wide-angle varifocal lens with a wide angle of 82°, F1.1 and optical 2.4x zoom (digital 4x), the VB-C500D achieves video monitoring in wide-ranging applications, including stores and offices, as well as applications in small areas such as at ATM and in elevator halls.

■ Compact Design Suitable for Various Installation Environments

The ultra-compact dome camera of 3.7 inches in size (dome diameter) can be installed inconspicuously in locations where appearance is given priority, such as in condominiums and hotel stores.

It can be installed in various ways, such as directly mounting on the ceiling, recessed into the ceiling, and mounting on a wall.

■ Capturing Color Images at 0.2 Lux

With its high imaging quality, the camera can capture color images at a minimum subject illumination of 0.2 lux while maintaining low noise and high color repeatability (when the 1/30-second Smart Shade Control is turned on).

■ Digital Night Mode Function to Automatically Adjust to Capturing at Low Illumination

When the illumination is low, such as during nighttime, the capture mode is automatically switched from color to monochrome and Canon's unique low-noise, high-quality imaging technology is used to increase the digital sensitivity. If the Digital Night Mode function is used, images can be captured at a minimum subject illumination of 0.1 lux (when the 1/30-second Smart Shade Control is turned on).

■ Smart Shade Control

When the background is bright and the subject is difficult to see, you can change the contrast of dark areas to make the subject clearer. Unlike the backlight compensation, blown out of the background can be prevented because bright areas are not controlled. These processes are implemented by the dedicated hardware in the camera, so drops in image quality can be reduced and system load can be decreased compared to when the conventional shade control is used (→ "Setting the Smart Shade Control in *Operation Guide*").

■ PoE

The VB-C500D supports Power over Ethernet (PoE*) technology, which enables simultaneous video/audio data transmission and power supply by simply connecting a PoE HUB and a single LAN cable (→ P. 2-6). When connecting to a PoE HUB, you need not connect a power adapter to the camera or perform any power wiring.

* PoE stands for Power over Ethernet, which is compliant with the IEEE 802.3af standard by the Institute of Electrical and Electronic Engineers.

■ Install-Less VB-C500 Viewer

This camera has a built-in VB-C500 Viewer, so its data can be viewed using a browser. Accordingly, there is no need to install a PC application. Also, three levels of user privileges can be set, including [Administrator], [Authorized Users] and [Guest Users].

■ Canon's Network Video Processor "DIGIC NET"

The camera incorporates DIGIC NET that offers high network distribution performance and a range of intelligent functions to achieve high image quality and high-speed communication such as simultaneous distribution of JPEG and MPEG-4.

■ Simultaneous Distribution of JPEG and MPEG-4

Video compression adopts JPEG/MPEG-4 to achieve high image quality/high frame rate of up to 30 frames per second*¹ in VGA (640x480). Up to 30 clients*² can view the same image simultaneously.

*¹ Note that the frame rate may drop depending on the performance of the viewer PC, number of clients connected at the same time, network load, etc.

*² In MPEG-4, up to 10 clients can be connected at the same time.

■ Multi-Streaming

In JPEG, image can be distributed in three sizes (640x480, 320x240, 160x120) at the same time.

■ High Quality Video of Moving Subjects

The VB-C500D utilizes a progressive-scan CCD to allow for the capture of noise-less, high quality video of moving subjects.

■ Selectable Metering Modes for Various Shooting Condition

Image can be captured by switching the metering mode* to one of three options, including Center-weighted, Average and Spot, according to the shooting condition of the camera. (→ "Setting Exposure" in *Operation Guide*)

* Brightness (light quantity) of the subject is measured to adjust the exposure.

■ Uploading and Sound Playback by Motion Detection Function

Change in video caused by movement of the subject is detected to upload the refreshed image and play sound.

■ Upload, E-mail Notification

Events generated by the motion detection function or an external input device are used as triggers to upload images tentatively recorded in the camera to the specified location via FTP/HTTP/SMTP (e-mail), or notify an event via HTTP/SMTP (e-mail).

■ Two-Way Audio (Full Duplex)

A microphone or speaker with amplifier can be connected*¹ to the camera to transmit/receive audio (full duplex) via the viewer*². You can select a desired audio input mode from LINE IN and MIC IN by switching the setting on the setting page (→ P. 3-7).

*¹ Microphones and amplifiers are sold separately.

*² VK-Lite Viewer is the only viewer that supports two-way audio communication.

VB-C500 Viewer only supports audio reception.

■ Small-scale Video Monitoring by Simplified Recording Software VK-Lite

This product comes with a simplified version **VK-Lite** of the optional **Network Video Recorder VK-64/VK-16 v2.1** (→ P. 1-6). Video captured by up to four cameras can be recorded/displayed in real time, to achieve small-scale video monitoring.

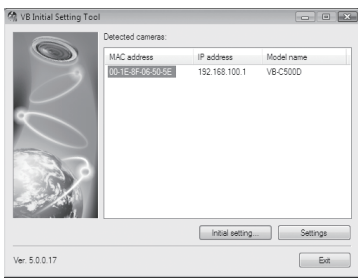
Bundled Software

The VB-C500D comes with the software specified below.

For the latest information on this product (firmware, bundled software, operation manuals, operating environment, etc.), visit our website.

VB Initial Setting Tool Ver. 5.0 (→ P. 2-10)

VB Initial Setting Tool is for initial setting of the VB-C500D. It is installed from Setup CD-ROM (→ P. 2-4). Users other than Administrators need not install this tool.



VBAAdmin Tools Ver. 5.0 (→ Overview of VBAAdmin Tools in *Operation Guide*)

VBAAdmin Tools are for visually setting motion detection and for displaying logs taken by the camera. It is installed from Setup CD-ROM (→ P. 2-4). Users other than Administrators need not install this tool.



VB-C500 Viewer Ver. 1.0 (→ Overview of VB-C500 Viewer in *Operation Guide*)

VB-C500D Viewer is for displaying video captured by this camera and controlling the camera. Three users can be set according to the camera control rights, including [Administrator], [Authorized Users] and [Guest Users]. This tool is already built into the camera and need not be installed beforehand (→ P. 2-4). JPEG video captured by the VB-C500D can be displayed.

To display MPEG-4 video, install VK-Lite Viewer (→ P. 1-7).



Note

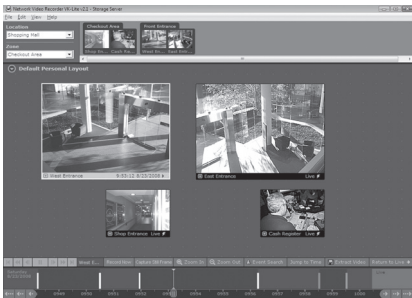
To use the camera with VBAAdmin Tools for the VB-C60, VB-C300 or VB-C50 series, install VBAAdmin Tools for the VB-C50 series first, and then install VB-C300, install VB-C60, and finally install VBAAdmin Tools bundled with the camera.

Tip

VB Initial Setting Tool Ver. 5.0 can be used commonly with the VB-C60, VB-C300 and VB-C50 series.

Network Video Recorder VK-Lite v2.1 (→ *Setup Guide*)

VK-Lite v2.1, which is a simplified version of the optional "Network Video Recorder VK-64/VK-16 v2.1" (→ P. 1-25), is included in the package. VK-Lite consists of the following two software programs:

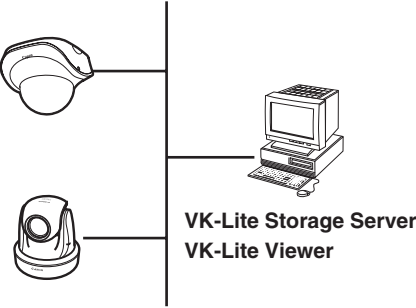


Software Configuration of VK-Lite

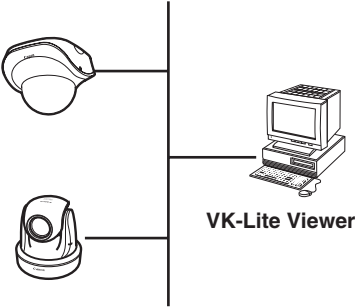
Type	Overview	License
VK-Lite Storage Server	Up to four cameras can be registered to record video.	1 license
VK-Lite Viewer	Recorded video saved in the storage server can be played or live video (JPEG/MPEG-4) can be displayed as it is captured by the camera. Up to four cameras can be registered for the viewer.	1 license

VK-Lite Storage Server and VK-Lite Viewer can also be installed in, and run on, the same PC.
VK-Lite Viewer can also be used independently, without connecting to VK-Lite Storage Server.

Configuration example based on
installation on the same PC



Configuration example with VK-Lite Viewer only



For VK-Lite, following cameras can also be registered and used.

Supported cameras	VB-C500D, VB-C60/VB-C60B, VB-C300/VB-C300B VB-C50i/VB-C50iR, VB-C50FSi, VB-C50Fi
-------------------	---



Note

To add a VK-Lite Viewer, you need to purchase an optional "VK-Lite Additional Viewer License".

Key Functional Limitations of VK-Lite and VK-64/VK-16

Category	Key functional limitation	VK-Lite v2.1	VK-64/VK-16 v2.1
Camera connection	Maximum number of cameras that can be connected	4 units	64 units/16 units
Storage server	Recording format	JPEG	JPEG MPEG-4
	Recording mode	Normal schedule recording (continuous recording) Manual recording	Normal schedule recording (continuous recording, sensor event recording, motion detection recording) Special day schedule recording Manual recording
	Maximum recording frame rate	5 fps	30 fps*1
	Maximum video retain period	12 weeks (90 days)	999 weeks*1
Viewer	Registration of multiple storage servers*2	—	○
	Number of displayable video windows	No more than 8 is recommended.	Not limited*1
	Layout Sequences*3	—	○

*1 The maximum limit may be imposed depending on the number of cameras, PC performance and hard disk space, network load, etc.

*2 When multiple storage servers are used, determine one master storage server. This way, cameras registered for each storage server, recorded data, etc., can be managed centrally using the viewer. With VK-Lite, switch the storage servers one by one if multiple storage servers are connected to the viewer.

*3 This function allows the displayed viewer window to be switched at specified intervals.

**Note**

For details on the operating methods and function limitations pertaining to VK-Lite, refer to the *Setup Guide* and *Administrator's Manual*.

**Tip**

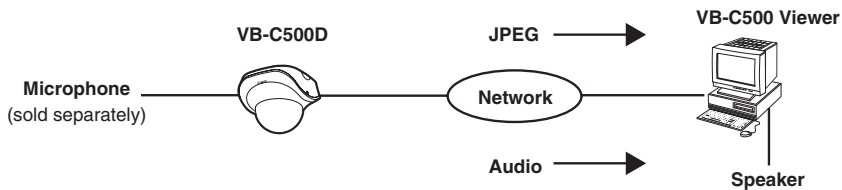
With VK-Lite, multiple storage servers cannot be registered. However, this function can be utilized if the optional VK-64 Viewer is used. Up to 10 units of VK-Lite Storage Server can be centrally managed and operated.

Comparison of Two Viewers

The VB-C500D has two viewers. The key differences are specified below.

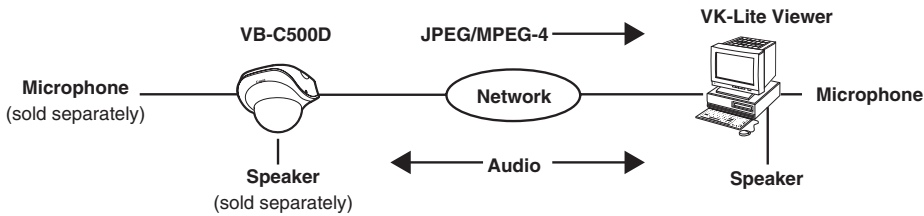
Viewer type	Live video display	Audio
VB-C500 Viewer	JPEG	Receive audio from the VB-C500D (one-way communication)
VK-Lite Viewer	JPEG/MPEG-4	Transmit/receive audio (two-way communication)

VB-C500 Viewer Audio Reception (One-way Communication)



Audio from the microphone connected to the VB-C500D can be listened from the viewer speaker.

VK-Lite Viewer Audio Transmission/Reception (Two-way Communication)



Audio can be transmitted/received between the VB-C500D and viewer.



Tip

PC, speaker and microphone are sold separately.

Operating Environment

For the latest information on this product (firmware, bundled software, operation manuals, operating environment, etc.), visit our website.

VB Initial Setting Tool Ver. 5.0, VBAdmin Tools Ver. 5.0, VB-C500 Viewer Ver. 1.0

1
Before Use

OS and browser	Windows Vista Home Premium/Business/Enterprise/Ultimate (SP1), Internet Explorer 7.0 Windows Server 2008 Standard Internet Explorer 7.0 Windows Server 2003 R2 Standard Edition (SP2), Internet Explorer 6.0 (SP2)/7.0 Windows Server 2003 Standard Edition (SP2), Internet Explorer 6.0 (SP2)/7.0 Windows XP Professional (SP3), Internet Explorer 6.0 (SP3)/7.0
Viewer display	With VB-C500 Viewer, use of a high-resolution display with an effective display area of 1024 x 768 or more is recommended.
Audio	If the camera's audio feature is used, the PC's audio support feature is required.

Network Video Recorder VK-Lite v2.1

CPU	Pentium 4 2.2 GHz or more Pentium 4 3.4 GHz or more, if MPEG-4 is used.
OS	Windows Vista Home Premium/Business/Enterprise/Ultimate (SP1)*1 Windows Server 2008 Standard Windows Server 2003 R2 Standard Edition (SP2) Windows Server 2003 Standard Edition (SP2) Windows XP Professional (SP3)
Memory	1 GB or more
Hard disk	Storage server : 20 GB or more (NTFS format)*2 Viewer : 2 GB or more
Viewer display	High-resolution, 16-bit color display with an effective display area of 1024 x 768 or more Use a video card of highest possible performance. If a PCI video card is used, the display performance may drop.
Audio	To use the camera's audio function or enable audio alert for event notification when the viewer is used, the PC's audio support function is required.

*1 Windows Vista and Windows Server 2008 support the 32-bit and 64-bit editions. Other OSs support only the 32-bit edition.

*2 External hard disks cannot be used.



Tip

The optional VK-64/VK-16 v2.1 does not support Windows Vista Home Premium.

Notes on Use When the [Windows Firewall] Function is Enabled

1

Before Use

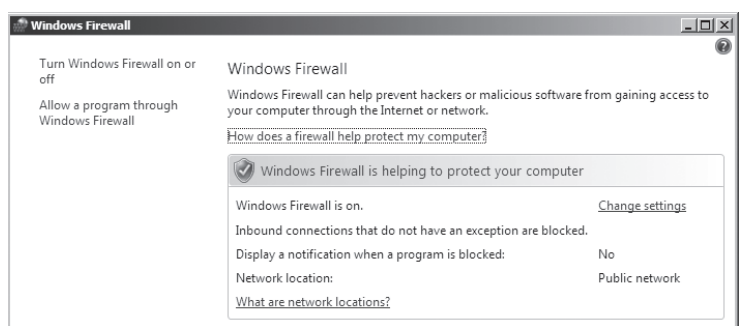
When [VB Initial Setting Tool] is started, the [Windows Security Alert] dialog box may appear.

If the [Windows Security Alert] dialog box appeared, click [Unblock].

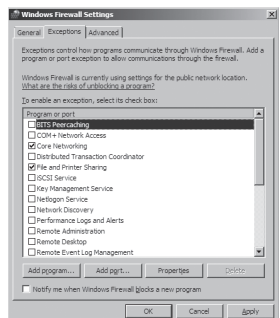
Once this button is clicked, this warning dialog box will no longer appear.

If the [Windows Security Alert] dialog box is not displayed, the warning function of the Windows firewall may be disabled. Follow the procedure below to add [VB Initial Setting Tool] as an exception to the Windows Firewall.

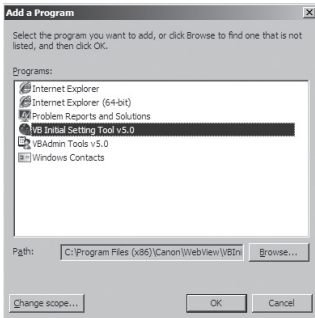
1. Click [Control Panel] and select [Windows Firewall]. If you are using Windows Vista/Server 2008, also click [Allow a program through Windows Firewall].



2. Next, click the [Exceptions] tab.



3. Click the [Add program...] button to add [VB Initial Setting Tool].



Notes on Use with Windows Server 2003/Windows Server 2008

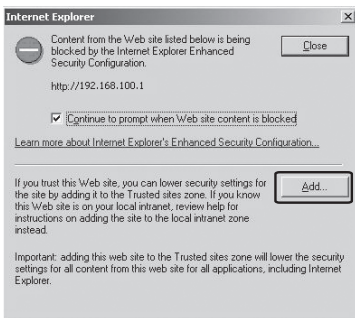
■ Registering the Camera's Top page as a Trusted Site

In Windows Server 2003 and Windows Server 2008, the security level for Internet sites and intranet sites on Internet Explorer is set to [High] by default.

Accordingly, when you access the top page of the camera, VB-C500 Viewer or any setting page, the contents block dialog box appears and the page is not displayed correctly.

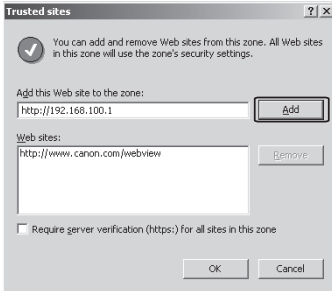
To display these pages correctly, register them as trusted sites.

1. When the camera's top page is accessed via Internet Explorer, the following dialog box appears.



2. Clicking [Add] opens the Trusted sites dialog box.

Clear the **[Require server verification (https:) for all sites in this zone]** check box, if currently selected.



3. Enter the IP address of the VB-C500D under [Add this Web site to the zone], and then click [Add] to register the site as a trusted site.

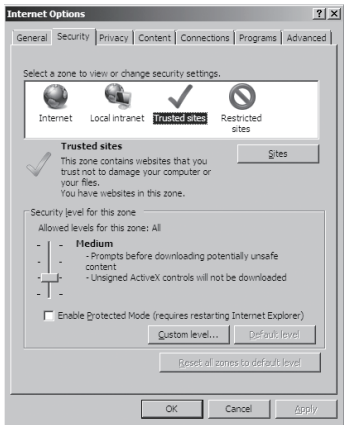
For details on registering trusted sites, click the [Learn more about Internet Explorer's Enhanced Security Configuration...] in the dialog box in 1 and see the displayed overview.

Note that even when the contents block dialog box does not appear, setting pages and operations of VB-C500 Viewer may still be limited because Java script is sometimes disabled under the standard security setting. Once the camera's top page is registered as a trusted site, Java script is automatically enabled.

If the contents block dialog box does not appear, you can follow the procedure below to display the [Trusted Sites] adding dialog box.

1. Click [Tools] on the Internet Explorer screen, select [Internet Options], the [Internet Options] dialog box appears.
2. Next, click the [Security] tab.

3. Select [Trusted Sites], and click [Site].



This completes the process of registering the camera's top page as a trusted site.

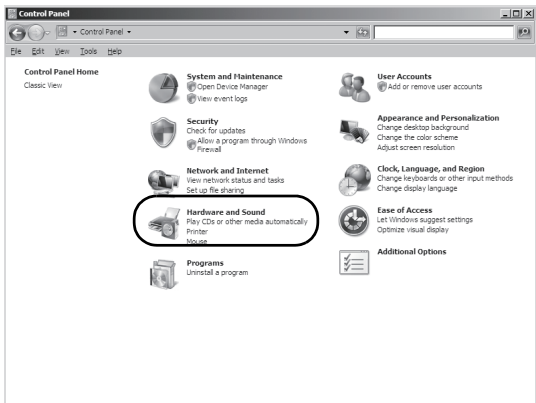
Notes on Use with Windows Server 2008

■ Enabling the Sound Function to Use Audio

In Windows Server 2008, the sound function is disabled by default.

If you want to receive audio on VB-C500 Viewer, enable the sound function by following the procedure below.

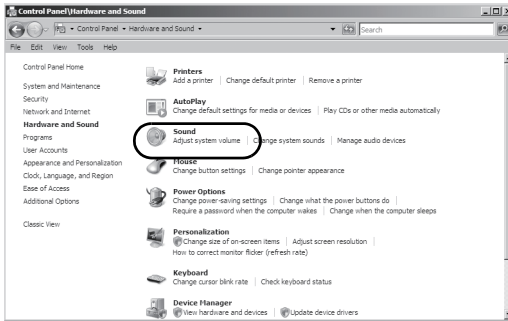
1. Click [Control Panel] and select [Hardware and Sound].



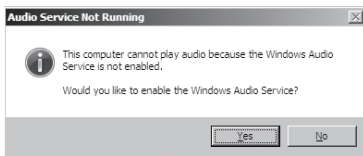
**Tip**

If [Control Panel] is displayed in a classic view, double-click [Sound].

2. Next, click [Sound].



3. When the dialog box with the message, [Audio Service is not running] appears, click [Yes].



4. Finally, the [Sound] dialog box appears. Click the [Playback] tab to confirm that an audio device has been installed. (If no audio device is installed, check the manual for your PC.)

Notes on Use with Windows Vista

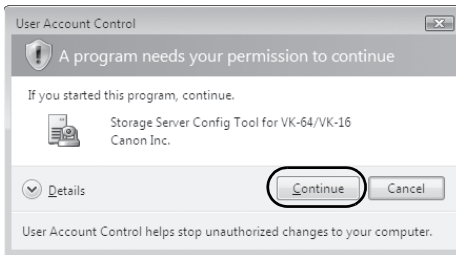
The following restrictions apply when the VB-C500D is used with Windows Vista Home Premium/Business/Enterprise/Ultimate.

■ Network Video Recorder VK-Lite v2.1

Warning dialog box displayed upon opening of the [Storage Server Settings] dialog box

If the User Account Control is enabled in Windows Vista, the User Account Control dialog box appears when the Storage Server Settings tool is started.

Click [Continue] and start the Storage Server Settings tool.



Video Storage Folder

In Windows Vista, do not specify the Windows folder or Program Files folder on the system drive as the folder for storing snapshots and specified video files. Images and videos cannot be saved in these folders.

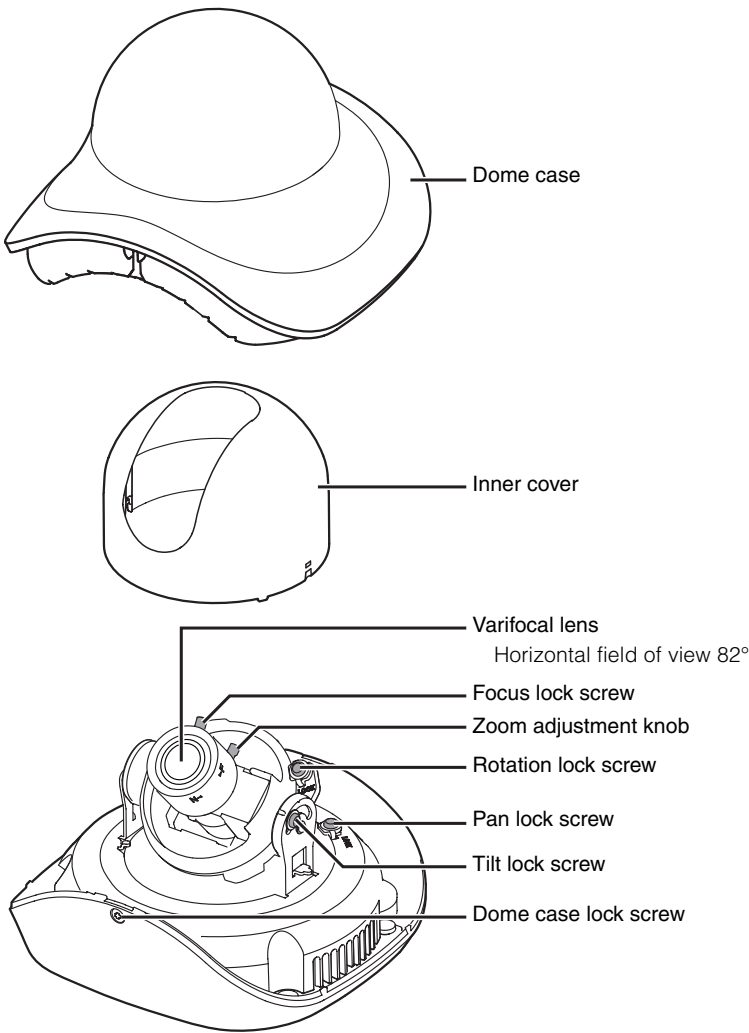
Shadow Backup Function

The shadow backup function of Windows Vista cannot be used.

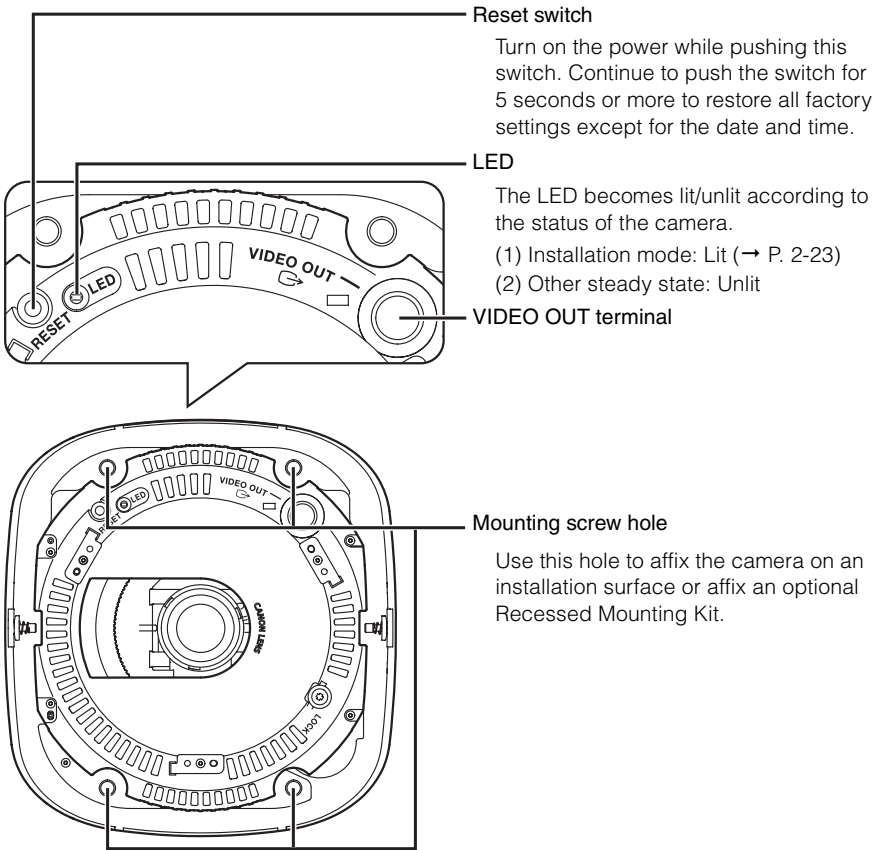
If a setting file of VK-Lite was accidentally deleted, for example, the file cannot be restored using the shadow backup function.

Name and Function of Each Part

Dome Case/Inner Cover/Camera Interior



Top View of Camera (Without Dome Case)

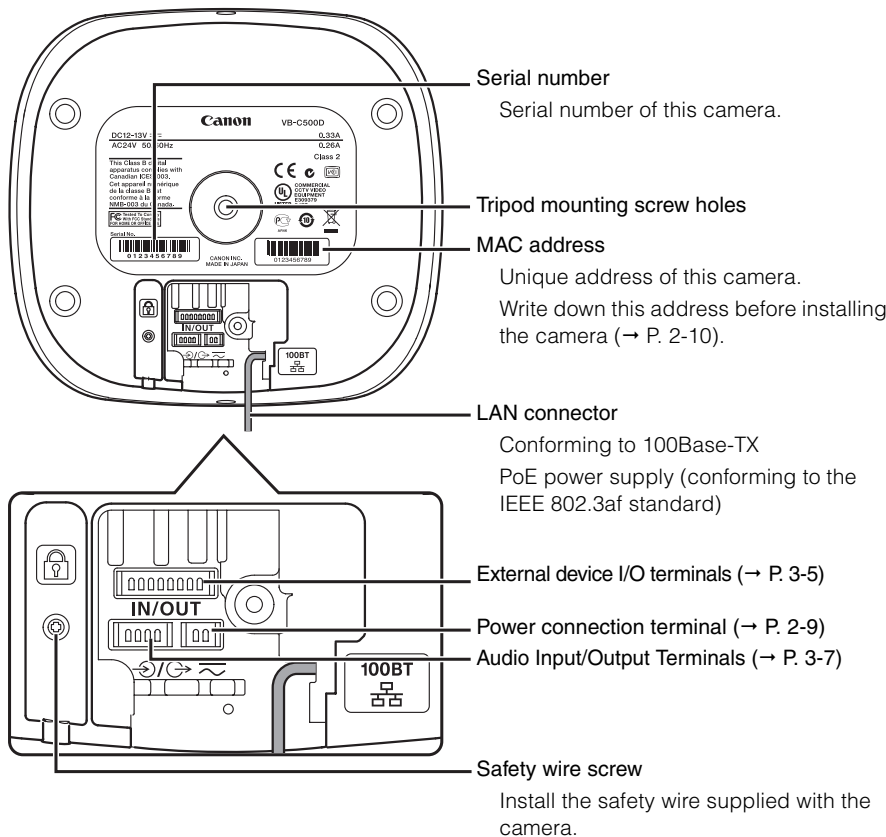


Bottom

The MAC address and serial number required in network setting are specified at the bottom of the camera. Write down these information before installing the camera.

1

Before Use

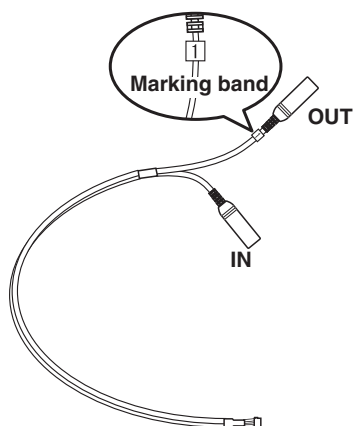


Optional Items

Purchase options separately as necessary.

Audio Interface Cable WA500-VB

Use this interface cable to connect the camera to an audio input/output device (speaker, microphone, etc.).

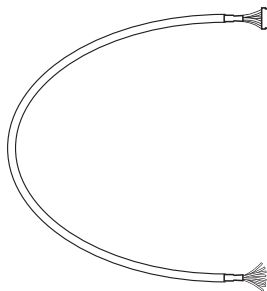


The terminal marked "1" on the marking band (farther away from the cable branching point) is used for audio output, while the unmarked terminal (closer to the branching point) is used for audio input.

For details on the audio input/output terminals, refer to P. 3-7.

I/O Interface Cable WC500-VB

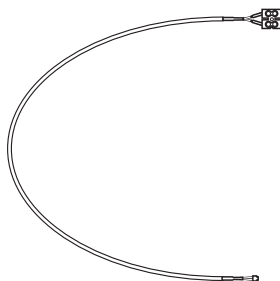
Use this interface cable to connect the camera to a contact input/output device (sensor, warning lamp, etc.).



For details on the external device input/output terminals, refer to P. 3-5.

Power Interface Cable WP500-VB

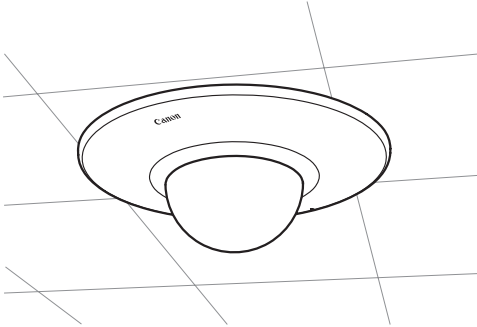
Use this interface cable to connect the camera to an optional AC adapter (PA-V17) or external power supply. For use of an AC adapter or external power supply, refer to P. 2-9.



Recessed Mounting Kit SR500-S-VB

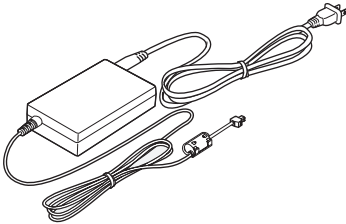
The Recessed Mounting Kit is a dedicated option for VB-C500D.

Use example



AC Adapter PA-V17

Use this adapter when a PoE HUB or external power supply is not used.



VK-Lite Additional Viewer License

VK-Lite Additional Viewer License is an additional license needed to install VK-Lite Viewer to each PC. You need to purchase the license if you want to view video captured by the camera using VK Viewer from multiple sites.

Network Video Recorder VK-64/VK-16 v2.1

High-functional monitoring & recording software that achieves simultaneous monitoring of multiple sites.

Example of VK-64/VK-16 Viewer screen



Note

VB-C500D cannot be used with an old version of VK-64/VK-16. If you are using an old version, update it to the new version. For details, visit our website.



Tip

This camera comes with VK-Lite v2.1, which is a simplified version of VK-64/VK-16 v2.1 (→ P. 1-6). Up to four cameras can be registered and used.



Initial Setting and Installation of Camera

The following explains how to install the camera.

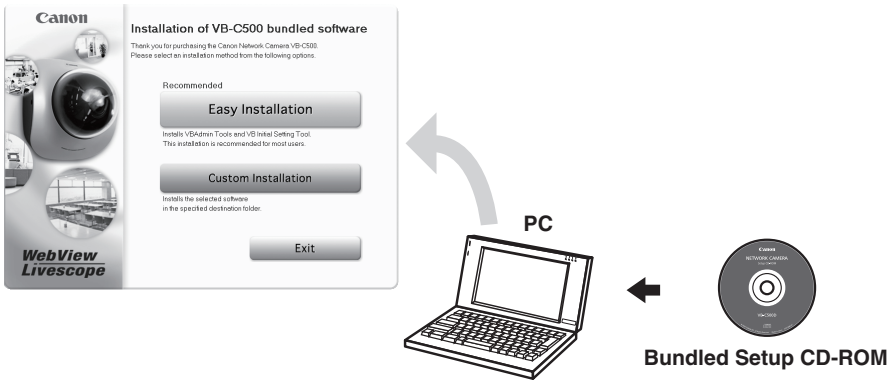
First, install the necessary software from the bundled Setup CD-ROM.
Next, connect the camera to the network and perform initial setting
of the camera. Check the video using VB-C500 Viewer, and then
install the camera.

**Before installing the camera,
be sure to set the IP address.**

Flow of Setup

Step 1 Install the software

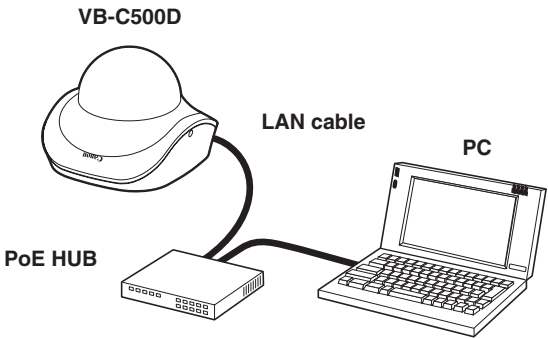
Insert the bundled Setup CD-ROM in the PC and install the necessary software (→ P. 2-4).



Step 2 Connect the camera to the network

Connect the VB-C500D and PC to the network (→ P. 2-6).

If a PoE HUB or Midspan is used, consult your Canon sales representative.

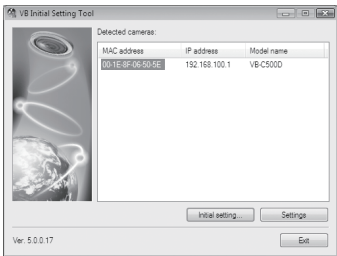


The figure shows connection via a PoE HUB.

Step 3 Perform initial setting of the camera

Start VB Initial Setting Tool and perform initial setting of the camera (→ P. 2-10).

Check the image using VB-C500 Viewer (→ P. 2-13).



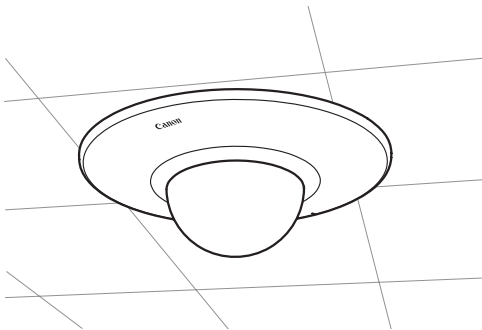
VB Initial Setting Tool window



VB-C500 Viewer

Step 4 Install the camera

Install the VB-C500D securely (→ P. 2-15).



Step 1 Install the Software

Install the Necessary Software

First, install the necessary software from the bundled Setup CD-ROM (→ P. 1-5).

Software for Initial Setting and Management of the Camera

Type	Overview
VB Initial Setting Tool	This tool is used to perform initial setting of the camera (→ P. 2-10). Users other than Administrators need not install this tool.
VBAdmin Tools	This tool is used to manage the camera (→ Chapter 2 in <i>Operation Guide</i>). Users other than Administrators need not install this tool.

⇒ Install it by executing VBToolsInstall.exe in the VBTools folder of Setup CD-ROM.

Recording Software

Type	Overview
Network Video Recorder VK-Lite	This software is used to display and record video captured by the camera. It consists of two components, Storage Server and Viewer (→ P. 1-6).

⇒ Install it by executing VKLiteInstall.exe in the VBTools folder of Setup CD-ROM.



Note

Use VK-Lite Viewer if you want to display MPEG-4 video from the camera.
Only JPEG video can be displayed using the built-in VB-C500 Viewer.

In-Camera Software (Need Not be Installed)

Type	Overview
VB-C500 Viewer	This software is used to display video captured by the camera. The software is already built into the camera and need not be installed beforehand (→ P. 1-6).

At this time, be sure to install **VB Initial Setting Tool** required in initial setting of the camera.

1. Insert Setup CD-ROM bundled with the camera in the CD-ROM drive of the PC, and perform the following procedure.
 - (1) After confirming that all other applications have been closed, click the [Start] menu and then select [My Computer].
 - (2) Double-click the displayed CD-ROM icon → VBTools Folder→ and then click VBToolsInstall.exe.



2. When the initial screen appears, select the installation method to install the software.



Easy Installation : VB Initial Setting Tool and VBAAdmin Tools are installed.

Custom Installation : The user can select and install desired software.

3. When the installation is complete, an icon appears on the desktop.



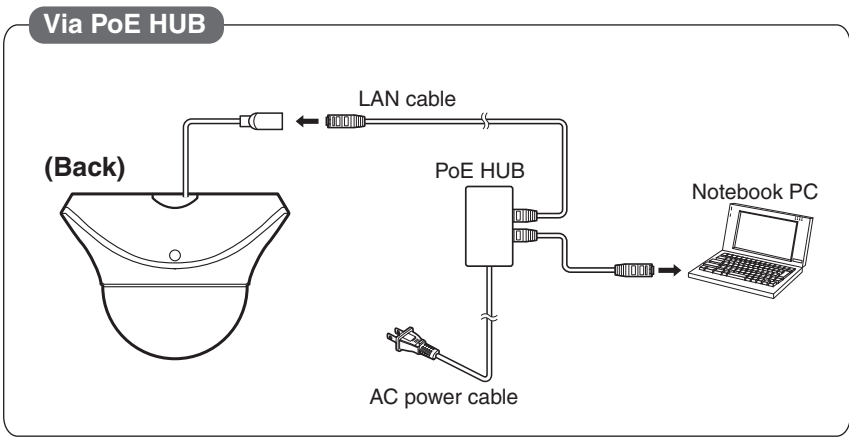
This completes the installation.

Step 2 Connect the Camera to the Network

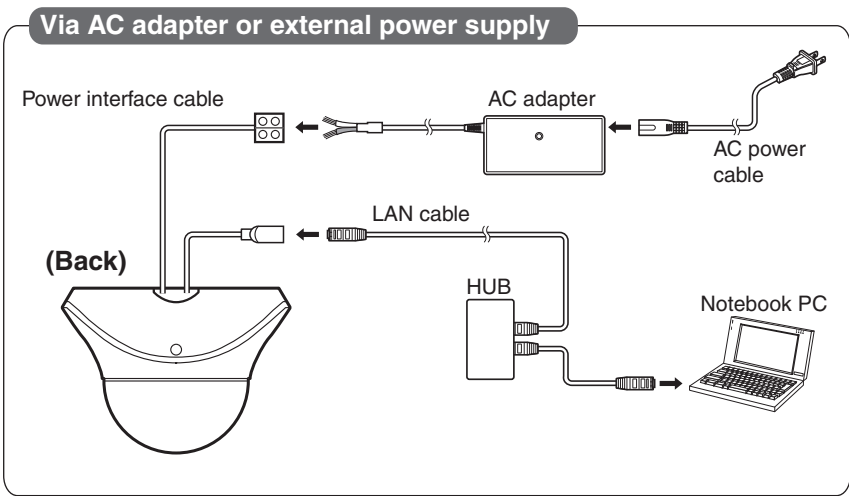
Connect the Camera to the Network and Turn On the Power

Here, an example of connecting one camera to a PC via a HUB is explained.

VB-C500D comes with a PoE (Power over Ethernet). The power can be supplied to the camera, via a LAN cable, from a PoE HUB conforming to IEEE 802.3af.



If an AC adapter (optional) or external power supply is used, connect it as shown below.
For details on the connection method, refer to P. 2-9.



The figure shows an AC adapter (optional).



Tip

When connecting an AC adapter (optional), unplug the connector at the end of the output cable for AC adapter and connect the wires to the power interface cable.

The power interface cable can be connected with no polarity.

This camera has no power switch.

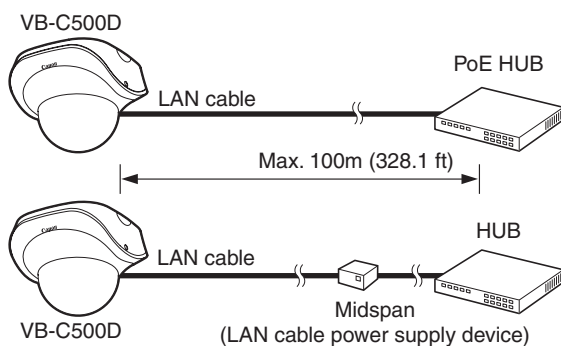
If the power is supplied by the PoE via a LAN cable on the VB-C500D, disconnect and connect the LAN cable to the HUB receiving the power, to turn the power "ON"/"OFF."

If an AC adapter (optional) or external power supply is used, disconnect and connect the power plug of the AC adapter (optional) or external power supply, to turn the power "ON"/"OFF."



Note

- For details on PoE HUB and Midspan, check with your Canon sales representative.
- For the operating methods and other details of a PoE HUB or Midspan, see the operation manual or other documentation that comes with the applicable device.
- For the LAN cable connecting the camera and a PoE HUB, use a cable of Category 5 or higher of a length not more than 100 m.
- If the camera is connected to a switching HUB, changing the connection while the camera is operating may disable communication due to the learning function of the HUB. Do not change the connection while the camera is operating.
- An AC adapter (optional) can also be connected to the camera while the power is supplied from a PoE HUB. In this case, the PoE power is given priority while the power is supplied from the PoE HUB and the power from the AC adapter (optional) is not used. Once the PoE power is cut off, the power is automatically supplied from the AC adapter (optional).



* Midspan (LAN-cable power supply) is a device that supplies power to the camera via a LAN cable, just like a PoE HUB.

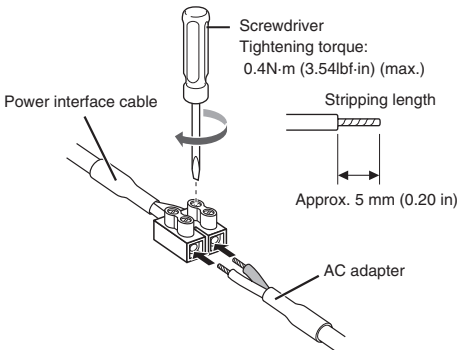
Note

When turning off the power and then turning it back on, wait for at least 5 seconds before turning on the power. If the power is turned on too quickly, the camera may not operate correctly. Also, when disconnecting/connecting the power connection, be sure to observe the instructions provided in "Safety Precautions/Notes on AC Adapter (Optional)" (→ P. xiv).

- The current may be limited for each port depending on the PoE HUB used. However, the camera may not operate correctly when the current is limited. If the camera malfunctions, do not limit the current.
- The total current consumption of ports may be limited depending on the PoE HUB used. If multiple ports are used, the ports may not operate correctly. Check the operation manual for the PoE HUB you are using.

■ Use of External Power Supply

Connect the bundled power interface cable (WP500-VB) as shown below.



Use a 12-VDC or 24-VAC power supply insulated from 100 VAC.

12 VDC can be connected in a non-polar condition.

Use the power supply within the following voltage range.

- 24 VAC: Voltage fluctuation within 24 VAC \pm 10%
 (50 or 60 Hz within \pm 0.5 Hz)
 Current supply capacity per camera 0.23 A
- 12 VDC: Voltage fluctuation within 12 VDC \pm 10%
 Current supply capacity per camera 0.36 A

* If a 12-VDC battery power supply is used, be sure to connect a resistor of 0.5 to 1.0 Ω /20 W or more to the power line.

Applicable wires and recommended power cable length

Applicable cable (AWG) Conductor size (Φ mm, Φ inch)	#18 (single wire Φ 1.0 mm (Φ 0.0039 in), stranded wire Φ 1.2 mm (Φ 0.0047 in))	#16 (single wire Φ 1.3mm (Φ 0.051 in), stranded wire Φ 1.6mm (Φ 0.063 in))
Maximum cable length, 12 VDC (m (ft))	23 (75.5)	32 (105.0)
Maximum cable length, 24 VAC (m (ft))	46 (150.9)	64 (210.0)
Use a UL cable (UL-1015 or equivalent) for wiring 12 VDC or 24 VAC.		

This completes the network connection.

Step 3 Perform Initial Setting of the Camera

Perform Initial Setting of the Camera

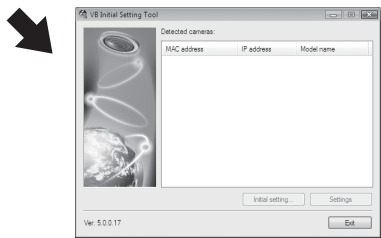
Set the network for the VB-C500D using VB Initial Setting Tool.

1. Launches VB Initial Setting Tool.

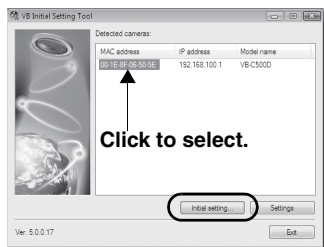
Double-click the [VB Initial Setting Tool v5.0] icon on the desktop, or click the [Start] menu, click [Programs], click [Webview Livescope], and then select [VB Initial Setting Tool v5.0].



Double-click the icon on the desktop.



2. VB Initial Setting Tool automatically detects the camera connected to the network, and displays the MAC address, IP address and model name of the camera.



The IP address has been set to

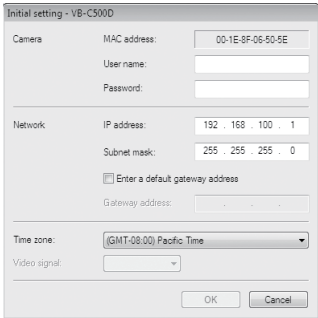
192.168.100.1

at the factory. The MAC address is specified on the label attached to the bottom of the camera (→ P. 1-21).

Note that VB Initial Setting Tool cannot exceed the subnet mask.

Click to select the MAC address, and then click the [Initial setting] button.

3. Enter the user name "root" and default password "camera," and then enter the IP address and subnet mask you want to set.



The dialog box titled "Initial setting - VB-C5000" contains the following fields and options:

- Camera section:**
 - MAC address: 00-1E-8F-05-50-5E
 - User name: (empty text box)
 - Password: (empty text box)
- Network section:**
 - IP address: 192 . 168 . 100 . 1
 - Subnet mask: 255 . 255 . 255 . 0
 - ☐ Enter a default gateway address
 - Gateway address: (disabled text box)
- Time zone:** (GMT+08:00) Pacific Time (dropdown menu)
- Video signal:** (dropdown menu)
- Buttons:** OK, Cancel

If the default gateway is not set, clear the [Enter a default gateway address] check box. When the setting is complete, click [OK].



Note

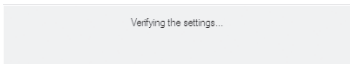
There may be cautionary information that should be heeded depending on your operating environment. Before the initial setting, refer to "Notes on Operating Environment" (→ P. 1-13).



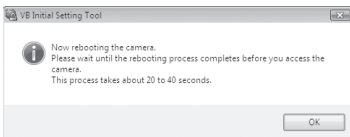
Tip

- The factory-set Administrator password is "camera." Be sure to change the password for security reasons ("Administrator Password" in *Operation Guide*).
- The MAC address of this camera is specified at the bottom of the camera (→ P. 1-21).
- The IP address **192.168.100.1** has been set at the factory. Set a desired IP address according to the environment in which the camera is used.
- For the IP address, subnet mask and gateway address to be set, contact your Network Administrator.

4. The progress of setting is displayed in a window.



5. Click [OK].





Note

- To set the IP address from the DHCP server, set an address from VB Initial Setting Tool to enable communication with the setup PC and change the setting of [IP Address Setting] under [Network] ("LAN" in *Operation Guide*) on the Setting page to [Auto (DHCP)].
- The camera will stop issuing IP address assignment requests in 20 minutes after its power is turned on, upon which detection by VB Initial Setting Tool will be disabled. In this case, turn on the camera again.
- To restore the factory settings, see "Restore Settings" in *Operation Guide*.

This completes the initial setting.

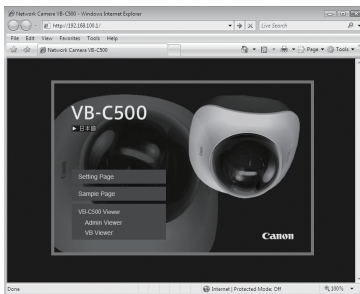
Check the Video Captured by the Camera

When the initial setting is complete, check the video captured by the camera using VB-C500 Viewer. At this time, set the network options on the PC according to the IP address and subnet mask set in the camera.

1. Click the MAC address of the camera whose operation you want to check, and then click [Settings].



2. The web browser starts and the top page of the camera is displayed. Click [VB Viewer] from [VB-C500 Viewer].



Note

- There may be cautionary information that should be heeded depending on your operating environment. Before the initial setting, refer to "Notes on Operating Environment" (→ P. 1-13).
- To open the setting page using the [Settings] button, do not change the HTTP port of the camera from 80. For information on setting the HTTP port number, see "HTTP Server" in *Operation Guide*.

3. The viewer starts and video captured by the camera is displayed.

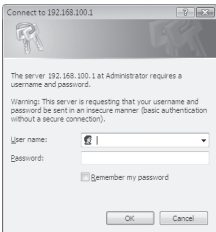


Note

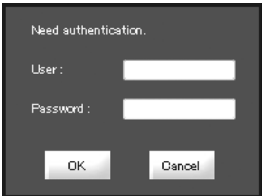
- Clicking [Setting Page] or [Admin Viewer] on the top page of the camera displays each user authentication window.

The factory-set user name and password are as follows:

User name: **root** Password: **camera**



Authentication Window Accessed via Setting Page



Authentication Window Accessed via Admin Viewer

- Be sure to change the administrator password for security reasons ("Administrator Password" in *Operation Guide*).
- To display both JPEG and MPEG-4 video, install and use VK-Lite Viewer (→ P. 1-7).
- Where video can be transmitted to is not limited by the factory settings, etc.
To use the camera for surveillance purposes, etc., be sure to set the [Access Control] options on the setting page. ("Setting User Access Privileges (Access Control)" in *Operation Guide*).



Tip

- For information on how to use VB-C500 Viewer, see *Operation Guide*.
- When [Setting Page] is clicked, various options can be set. ("Accessing the Setting Menu" in *Operation Guide*).

This completes the video check process.

Step 4 Install the Camera

Note on Use before Installing the Camera

Be sure to install the camera after setting the IP address (→ P. 2-10).



Note

- The camera will stop issuing IP address assignment requests in 20 minutes after its power is turned on, upon which detection by VB Initial Setting Tool will be disabled. Before installing the camera, set the IP address and check the operation by referring to "Perform Initial Setting of the Camera" (→ P. 2-10).
- The unique MAC address of this camera is specified at the bottom of the camera (→ P. 1-21). It is recommended to write down the MAC address before installing the camera.

Note

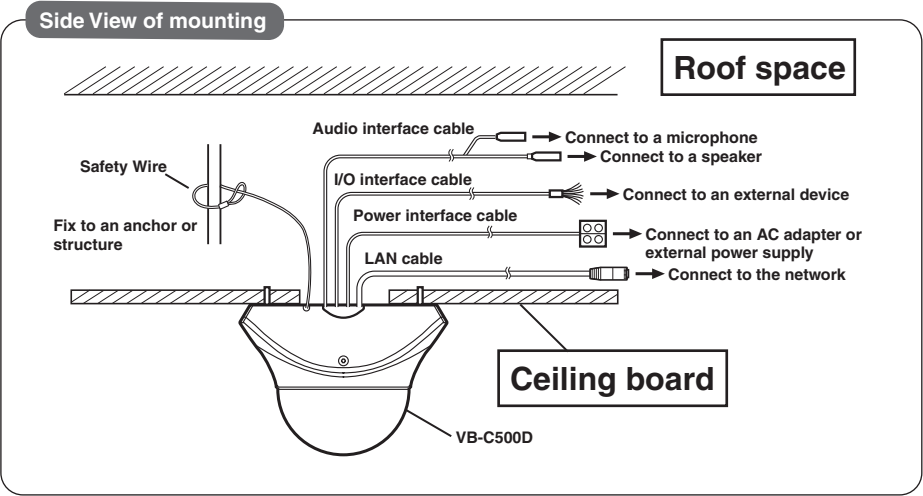
For installation or inspection of the VB-C500D, consult/request the store where you purchased the product.

- **Wire the VB-C500D power supply, network, or other cables safely and securely according to the relevant regulations such as technical standards for electrical installations.**
- **Before the installation, select an installation location (ceiling, etc.) having sufficient strength to withstand the weight of both the camera and any options to be used (optional Recessed Mounting Kit). If necessary, provide sufficient reinforcement and use the bundled safety wire.**
- **To prevent injuries and equipment damage due to falling items, periodically check the brackets and screws for rusting and loosening.**
- **Installing the camera in locations subject to strong vibration is not recommended. Equipment damage may occur.**
- **Do not install the VB-C500D on an unstable or inclined surface.**

- **Do not carry the product while the LAN cable or other cables are still connected to it.**

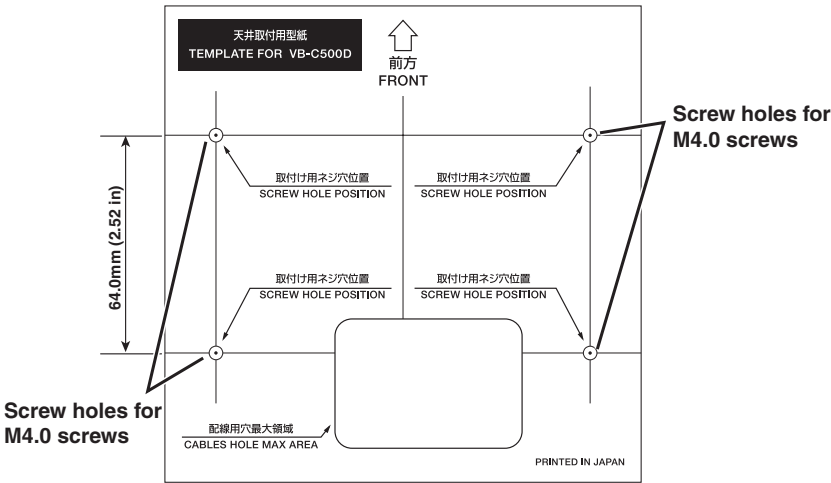
Malfunction may occur.

Installation Procedure for Direct Mounting on a Ceiling/Wall



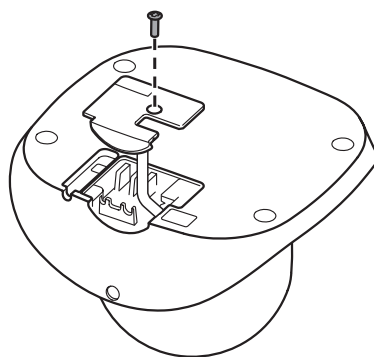
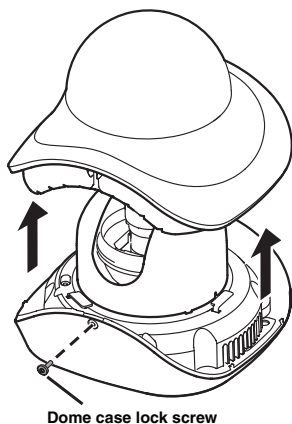
1. Use the bundled template to determine the installation position of the camera.

Confirm the capturing direction of the camera and determine the positions of camera mounting screws, as well as wiring holes if necessary, using the supplied template.



2. Remove the dome case and cable cover from the camera.

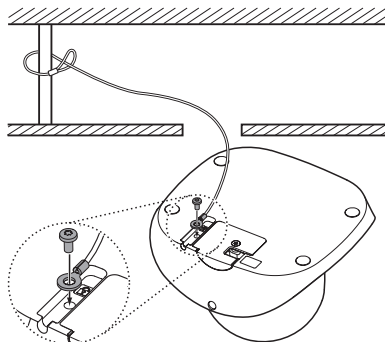
- To remove the dome case, loosen the two screws on the side face of the camera. Loosen the screws until they project.
- To connect various interface cables (audio, I/O, power), remove the cable cover lock screw at the bottom of the camera.



Note

When removing the dome case, be careful not to scratch or dirty the dome.

3. Affix the safety wire to the camera and also to the installation location (anchor or structure in the ceiling, etc.).



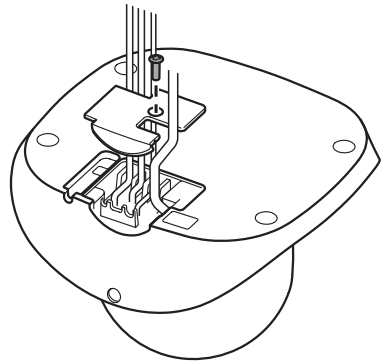
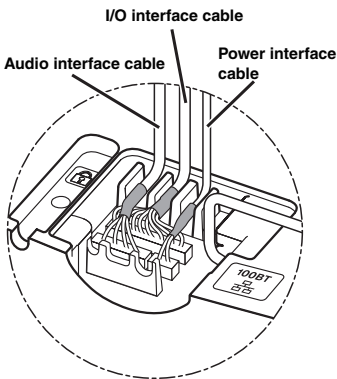
Note

The wire direction is different depending on how the camera is installed.

4. Connect each interface cable.

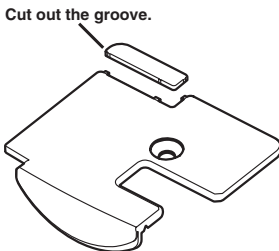
- This process is not required if you don't use any microphone, sensor, AC adapter or external power supply.
- Select an appropriate interface cable according to the external device used, and connect the cable to the camera.
- The interface cables and camera have dedicated connectors and connection terminals, respectively.
- You can select a desired direction from which to take out the interface cables and other wirings.

■ Concealing the Wiring in a Ceiling



The cable cover has a cutout groove for guiding interface cables.

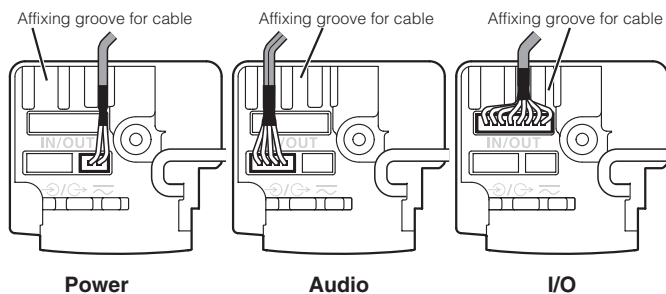
Cut out the groove, guide the cables through the cutout, and affix the cover to the camera with screws.



Note

Observe the following items when connecting the interface cables.

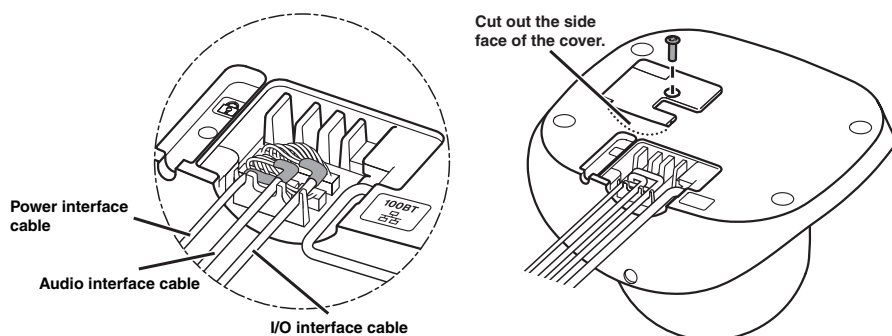
- Firmly insert the dedicated terminals on the audio interface cable into the audio input/output terminals on the camera.
- Affix each interface cable in the specified groove, as shown below.



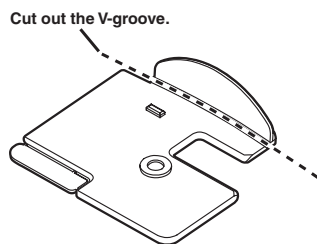
Interface cable fixing method

If the cable is not properly installed, it may come off and cause the camera to malfunction.

■ Wiring on a Ceiling



If the wirings cannot be concealed in the ceiling, cut out the V-groove in the cable cover and take out the wirings from the side face of the camera, and then affix the cable cover with screws.



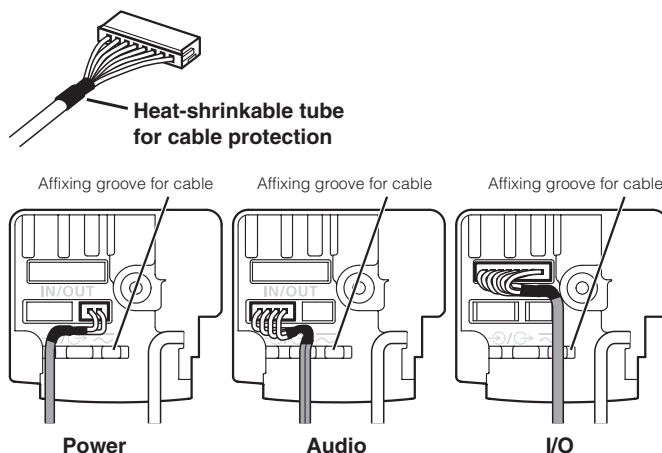
For the types of interface cables, refer to the page on Optional Items (→ P. 1-22).

Note

Observe the following items when connecting the interface cables.

- Firmly insert the dedicated terminals on the audio interface cable into the audio input/output terminals on the camera.
- Affix the interface cables in the specified grooves, respectively, in the order of power supply, audio and I/O, as shown below.

At this time, make sure the heat-shrinkable tubes that protect the cables rest properly in front of the affixing grooves.



Interface cable fixing method

If the cable is not properly installed, it may come off and cause the camera to malfunction.

Note

- When disconnecting/connecting the audio interface cable, I/O interface cable and power interface cable, always do so by holding the connector.
- If the audio input/output, external device input/output and external power supply are used, do not use any cable other than the dedicated interface cables. Damage may occur.

Step 4 Install the Camera

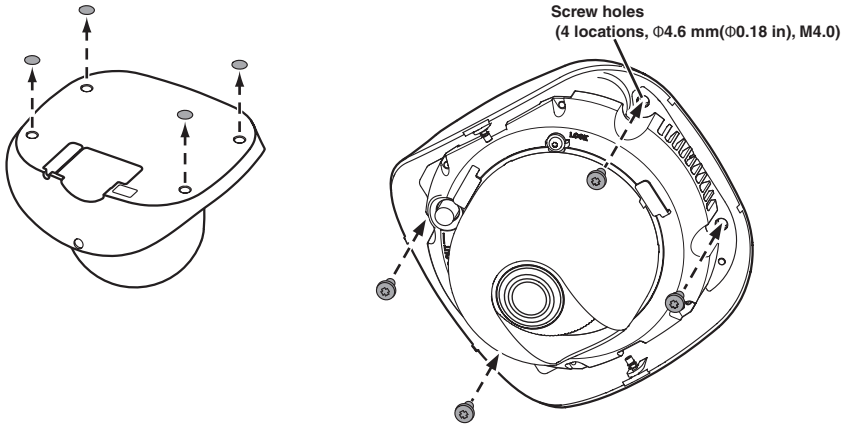
5. Connect the LAN cable, and also connect each external device using a cable.

Connect the LAN cable that has been guided through the wiring hole, to the LAN cable on the camera side.

If necessary, connect the audio, I/O or power interface cable to each external device.

6. Affix the camera on the ceiling.

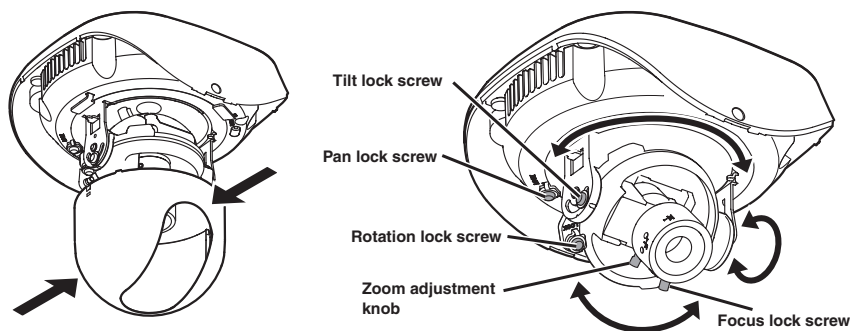
Affix the camera by removing the safety sheet from the camera mounting screw holes on the base of the device (4 locations), and then aligning the screw holes with the camera mounting screw locations marked in step 1.



7. Adjust the camera angle and focus.

- Push the inner cover in the direction of the arrow, as shown below, to remove the cover.
- Loosen the pan, tilt and rotation lock screws and adjust the lens in a desired direction, and then lock the screws.

- Next, loosen the focus lock screw.
- Adjust the viewing angle and focus using the zoom adjustment knob and focus ring. When the adjustment is complete, tighten the focus lock screw to lock the focus.



■ Focus Adjustment Method

To adjust the focus, press the reset switch to enter the installation mode. Accurate focus adjustment can be performed in the installation mode. Also note that video output is enabled in the installation mode.

Procedure

- So you can check the camera image, connect a monitor to the video output or otherwise display image on the PC via a LAN. (Refer to the page on "Step 3: Check the video captured by the camera.")
- Next, press the reset switch and adjust the focus.
- Once the focus has been adjusted, turn off the power and then turn it back on, or reboot the camera from the setting page, to end the installation mode.

Take note that the installation mode ends automatically after 30 minutes. If you want to continue with the focus adjustment, press the reset switch again.

Note

When the lens is used in the telephoto mode, focus change may become conspicuous if the dome case is installed. In this case, you can prevent out-of-focus by adjusting the focus to a point closer than the target subject.



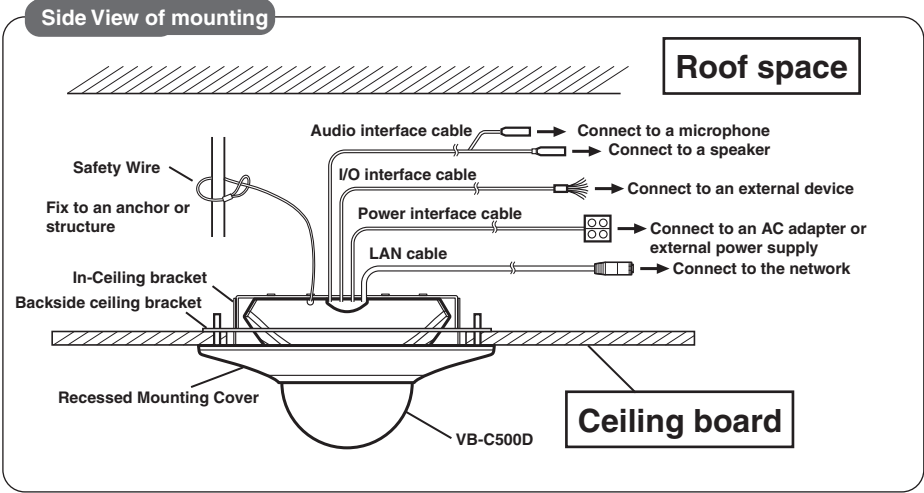
Tip

- Image from the network is disconnected when you switch to the installation mode (when the reset switch is pressed) or return to a normal mode from the installation mode.
- In the installation mode, the camera cannot be controlled.
- Only NTSC is supported for video output.
- The LED remains lit in the installation mode, and a white square is shown on the bottom left of the screen.

8. Install the inner cover and dome case.

Finally, place the inner cover and dome case, and tighten the two screws on the side face.

Installation Procedure for In-Ceiling with a Ceiling/Wall



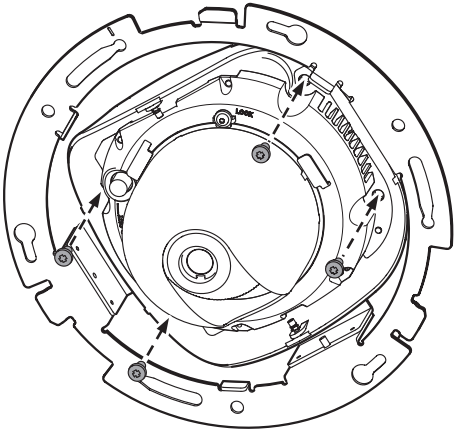
2

Initial Setting and Installation of Camera

To install the camera inserted into a ceiling/wall, use an Recessed Mounting Kit SR500-S-VB (optional).

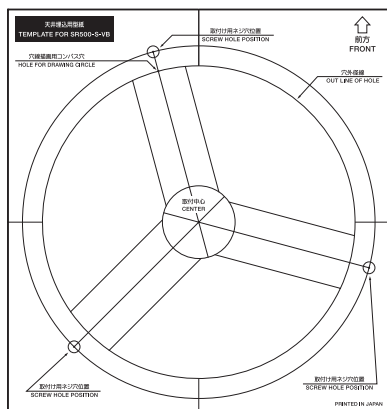
1. Install the camera to the assembled in-ceiling bracket using four screws.

Use the screws supplied with the Recessed Mounting Kit.

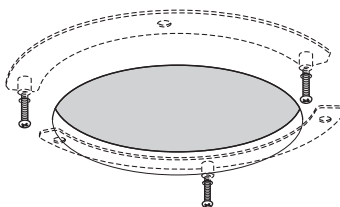
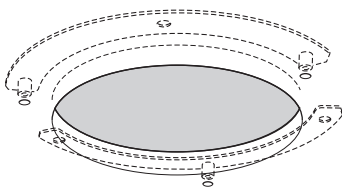


2. Use the template supplied with the Recessed Mounting Kit to determine the installation position of the camera.

Confirm the capturing direction of the camera, and then use the supplied template to open holes for the Backside Ceiling Bracket and in-ceiling bracket.

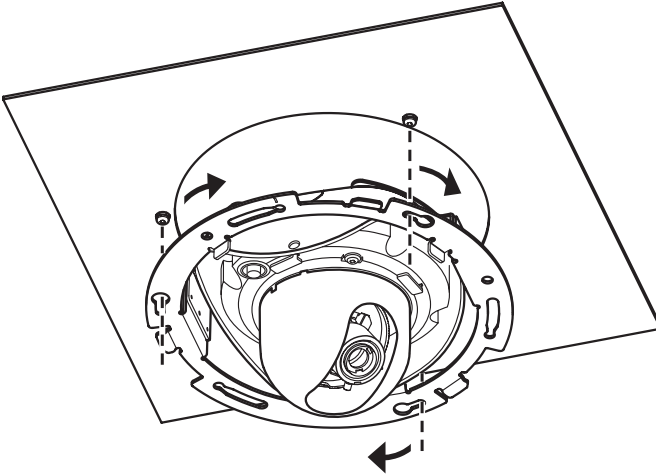


3. Install the assembled in-ceiling bracket at the back of the ceiling/wall and secure it with screws.



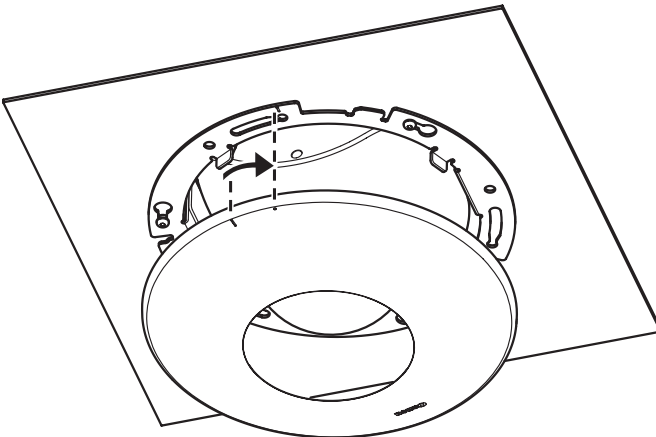
4. Connect the Safety Wire, necessary interface cables and LAN cable, and also connect each external device with a cable, by following steps 2 to 6 of "Installation Procedure for Direct Mounting on a Ceiling/Wall."

5. Affix the assembled in-ceiling bracket assembled with the camera, on the installation surface.
Hook the assembled in-ceiling bracket on the screws that were loosely secured in step 3, turn the bracket clockwise, and securely tighten (affix) the screws.



6. Adjust the camera angle and focus in the same manner as in step 7 of "Installation Procedure for Direct Mounting on a Ceiling/Wall," and install the dome case.
7. Install the recessed mounting cover.

Finally, align the mark (O) on the recessed mounting cover with the mark (I) on the in-ceiling bracket, and turn the cover clockwise to the mark (I) on the recessed mounting cover to affix the bracket in position.



This completes the installation.



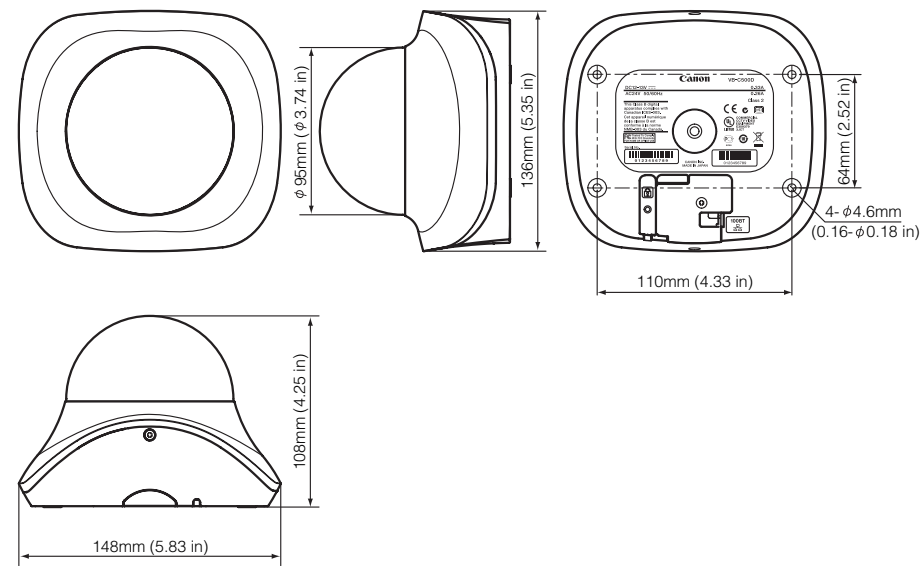
Appendix

This section explains the external dimensions, specifications, external device input/output terminals, audio input/output terminals, etc.

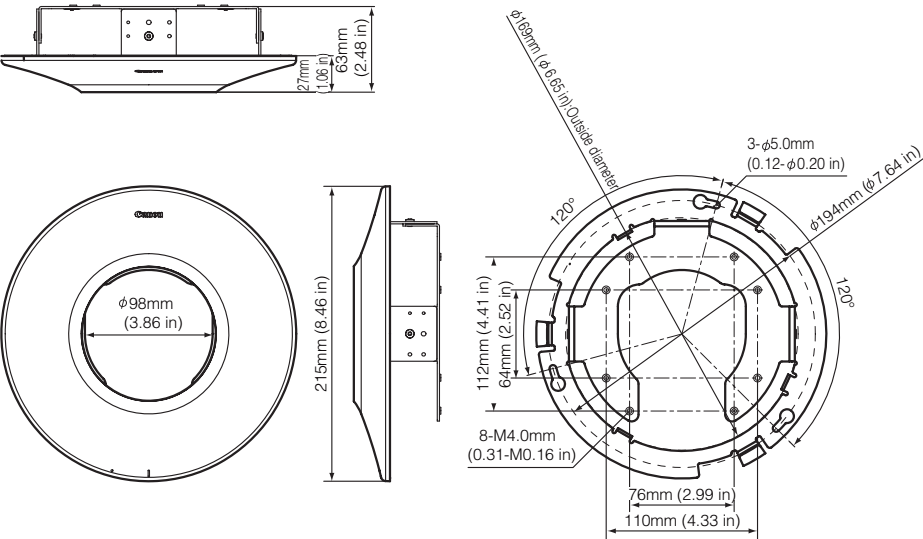


External Dimension Drawing

VB-C500D



Recessed Mounting Kit SR500-S-VB (Option)



Main Specifications

VB-C500D		
Camera	Image sensor	1/4-inch CCD (primary color filter)
	Number of pixels	Effective pixels: 310,000 pixels
	Scanning method	Progressive method
	Lens	Varifocal lens: Optical 2.4x zoom lens (digital 4x)
	Focus length	f=2.6 to 6.2mm
	F-value	F1.1 (W end) to F1.4 (T end)
	Viewing angle	Horizontal field of view: 82° (W end) to 34° (T end) Vertical viewing angle: 60.5° (W end) to 25.5° (T end)
	Day/night capability	Auto/manual switching
	Minimum subject illumination	Day mode : 0.2 lux (F1.1, color, 1/30 second, Smart Shade Control: ON / level 7) *0.5 lux when the Smart Shade Control is turned off Night mode : 0.1 lux (F1.1, black & white, 1/30 second, Smart Shade Control: ON / level 7) *0.2 lux when the Smart Shade Control is turned off
	Focus	Manual
	Focus range	0.7 m (2.3 ft) proximity to ~∞ * Common to Day/Night modes
	Shutter speed	1/1 to 1/8000 second
	AE	Auto, flickerless, shutter speed (12 levels from 1/8 to 1/8000 seconds)
	White balance	Auto/light source/lock (one-shot WB)
	Metering mode	Selectable from 3 modes (Center-weighted/Average /Spot)
	Exposure compensation	7 levels
	Smart Shade Control	7 levels (Function to control dark areas when the video has brightness difference)
	Pan angle range	350° (±175°)
	Tilt angle range	150° (±75°)
	Rotation angle range	350°
Server	Video compression method	JPEG/MPEG-4 Simultaneous data distribution is possible.
	Video size	JPEG : 640x480/320x240/160x120 (Images of 3 sizes can be distributed simultaneously) MPEG-4 : 640x480/320x240 (Fixed to 1 size)
	Video quality	JPEG/MPEG-4: 5 levels (With JPEG, a desired level can be set for each size.)
	Frame rate	JPEG : 30 to 0.1 fps MPEG-4 : 30/15/10 fps
	Maximum frame rate	JPEG : Max. 30 fps (640x480)*1 MPEG-4 : Max. 30 fps (640x480)*1
	Number of clients that can be connected simultaneously	Up to 30 clients (MPEG-4: Up to 10 clients)
	Audio compression method	G.711μ-law (64 kbps)
	Audio communication mode	Full duplex (two-way communication)
	Audio playback	O (Audio files can be played on occurrence of events by motion detection or external device input)*2
	Protocol	IPv4 : TCP/IP, UDP, HTTP, FTP, SNMP (MIB2), SMTP (client), DHCP (client), DNS (client), ARP, ICMP, POP3, NTP, SMTP authentication, WV-HTTP (Canon's original protocol) IPv6 : TCP/IP, UDP, HTTP, FTP, SMTP (client), DNS (client), ICMPv6, POP3, NDP, SMTP authentication, WV-HTTP (Canon's original protocol)
	IPsec	O
	Camera control	3 types of users (Administrator/Authorized Users/Guest Users) can be controlled/managed separately. User names and passwords for up to 50 users can be registered.
	Connection restriction	Access restriction (user name and password)/IP address restriction (IPv4/ Restriction on number of clients that can be connected simultaneously
	Motion Detection	O (Up to four detection areas can be set in the shooting window.)
	JPEG image upload	FTP/HTTP/SMTP (e-mail) Temporary camera memory for upload: Approx. 4 MB max., Frame rate: 10 fps max.
	Event notification function	HTTP/SMTP (e-mail)

*1 Note that the frame rate may drop depending on the performance of the viewer PC, number of clients connected at the same time, network load, etc.

*2 An optional speaker with amplifier is required to play audio.

- The specifications are subject to change without notice for purposes of improvement, etc.

VB-C500D (Continued)		
Interface	Network terminal	LAN-1 (RJ45, 100Base-TX (Auto/Full Duplex/Half Duplex))
	Audio input terminal (Used as both LINE IN and MIC IN)	Φ3.5 monaural mini jack connector * Connection via an audio interface cable LINE IN-1 (connected to a microphone with amplifier) or MIC IN-1 (connected to a microphone without amplifier) (LINE IN and MIC IN can be switched on the setting page)
	Audio output terminal (LINE OUT)	Φ3.5 monaural mini jack connector * Connection via an audio interface cable LINE OUT-1 (connected to a speaker with amplifier)
	External device input/output terminals	Input-2 Output-2 * Connection via an I/O interface cable
Others	Operating environment	Temperature: -10 to 50°C Humidity: 20 to 85% RH (non-condensing)
	Power supply	PoE: Supporting PoE power supply via a LAN connector (conforming to the IEEE 802.3af standard) Dedicated AC adapter: Supporting optional PA-V17 (100 VAC) * Connection via a power interface cable (non-polar) External power supply: Supporting 24 VAC/12 VDC * Connection via a power interface cable (non-polar)
	Power consumption	When PoE is used: approx. 3.3 W max. Dedicated AC adapter PA-V17 used: approx. 3.6 W max.
	Dimensions	136mm x 148mm x 108mm (5.35 in x 5.83 in x 4.25 in) (W x D x H)
	Weight	Approx. 640 g (1.411 lb)

AC adapter (option)	
Model	PA-V17
Input	100 VAC, 50/60 Hz
Output	13 VDC, 1.8 A (max.), temperature -10°C to 35°C, humidity 20 to 85% RH (non-condensing) When combined with the network camera 13 VDC, 1.0A (max.), temperature -10°C to 45°C, humidity 20 to 85% RH (non-condensing)
Polarity	Black line side (-), white line side (+)
Dimensions	58 mm x 118 mm x 25 mm (2.28 in x 4.65 in x 0.98 in) (W x D x H) (excluding projections)
Weight	Approx. 215 g (0.474 lb) (excluding cables)

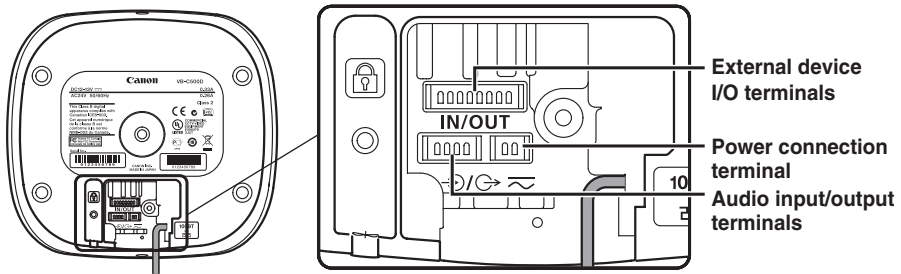
Recessed Mounting Kit (option)	
Model	SR500-S-VB
Type	Silver
Use environment when combined with the camera	Temperature -10 to 50°C, humidity 20 to 80% RH (non-condensing)
Dimensions	Φ215mm x 63mm (H) (Φ8.46 in x 2.48 in (H)) (including brackets)
Weight	Approx. 395 g (0.871 lb) (including Recessed Mounting Cover and brackets) * Cover only: Approx. 66 g (0.146 lb)

- The specifications are subject to change without notice for purposes of improvement, etc.

Input/Output Terminals

The various input/output terminals of the camera are located inside the cable cover at the bottom of the camera.

To connect the camera to an audio input/output device, contact input/output device, AC adapter or external power supply, open the cable cover and connect the device using a dedicated interface cable. All interface cables come with dedicated terminals for connection with the camera. Check the shape of each terminal thoroughly and insert the terminal in the correct direction.



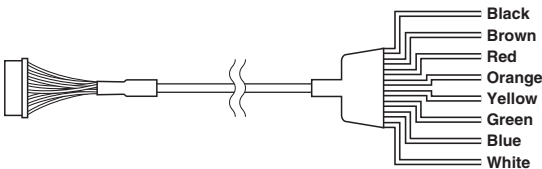
External Device I/O Terminals

Two external device input terminals and two external device output terminals are available.

VB-C500 Viewer and VK-Lite Viewer can be used to check the conditions of external device inputs and operate external device outputs. ("Operating the External Device Outputs" and "Displaying the External Device Input Status" in *Operation Guide*).

To connect the camera to an external device, use a dedicated I/O interface cable WC500-VB. (P. 1-23)

The table below lists the colors and functions of spare wires in the I/O interface cable.



	Color of spare wire	Type of corresponding terminal
1	Black	OUT2_B
2	Brown	OUT2_A
3	Red	OUT1_B
4	Orange	OUT1_A

	Color of spare wire	Type of corresponding terminal
5	Yellow	IN2_-
6	Green	IN2_+
7	Blue	IN1_-
8	White	IN1_+

■ External Device Input Terminals (IN1, IN2)

There are two sets of external device input terminals (IN1, IN2), where each set consists of two terminals. The - terminals are connected to the GND in the camera. Two-wire cables are connected to the + and - terminals to achieve electrical continuity or insulation between the two terminals for notification to the viewer.



Note

For the sensors and switches to be connected, connect terminals that are electrically isolated from each power supply or GND.

■ External Device Output Terminals (OUT1, OUT2)

There are two sets of external device output terminals (OUT1, OUT2), where each set consists of two terminals. Each terminal set has no polarity. The condition between the two terminals can be switched between connected and disconnected by controlling from the viewer. The output terminals are isolated from the internal circuits of the camera using optical couplers.

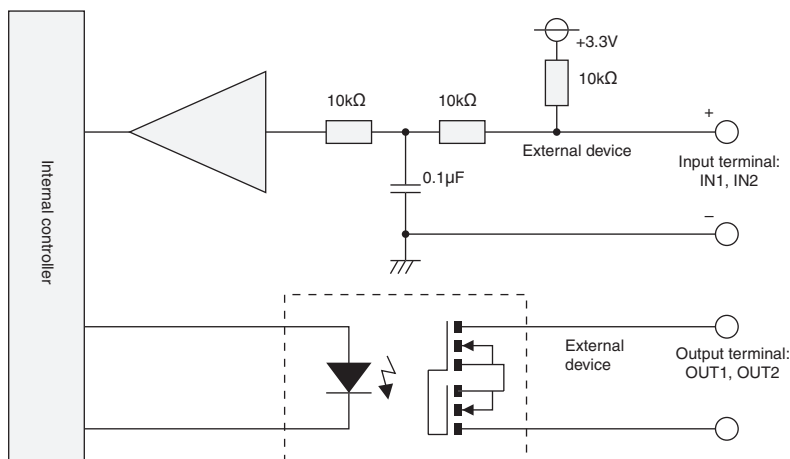
The loads connected to the output terminals should be used within the following ratings:

Ratings between output terminals:

Maximum voltage 50 VDC

Continuous load current 100 mA max.

■ Internal Connection Diagram



Tip

Applicable wire for external device cable

Single wire of AWG No. 28 to 22

Conductor size $\Phi 0.32$ to 0.65 mm ($\Phi 0.013$ to 0.026 in)

Strip the cable by approx. 8 to 9 mm (0.31 to 0.35 in)

Audio Input/Output Terminals

One audio input terminal and one audio output terminal is available.

A microphone, speaker with amplifier or other audio input/output device can be connected to the camera to send/receive sound via the viewer.

To connect the camera to an audio input/output device, use a dedicated audio interface cable WA500-VB.(P. 1-22)

Use a $\Phi 3.5$ monaural mini jack connector to connect the audio interface cable and audio input/output device.

■ Audio Input, Used as Both LINE IN and MIC IN (Monaural Input)

Connects the camera to a microphone. As for audio input of this camera, two types of microphones, LINE IN and MIC IN types, are supported. Note that the camera only has one audio

input. Switch the input mode on the Setting page ("Audio Input" in *Operation Guide*). The factory setting is LINE IN.

When LINE IN is selected, a microphone with amplifier can be connected.

When MIC IN is selected, a dynamic microphone or capacitor microphone can be connected.

Input terminal: Φ 3.5-mm mini jack (monaural)

- Dynamic MIC IN setting
Input impedance: $1.75\text{ k}\Omega \pm 20\%$

* Supported microphone
Output impedance: $400\Omega \sim 600\Omega$
- Capacitor MIC IN setting
Input impedance (microphone bias resistance): $2.2\text{ k}\Omega \pm 20\%$

Microphone power supply: Plug-in power (voltage: 1.8 V) method

*Supported microphone
Capacitor microphone of plug-in power type
- LINE IN setting
Input level: 1 Vp-p max.

* Use a microphone with amplifier.

■ Audio Output Terminal LINE OUT (Monaural Output)

Connects the camera to an amplifier with speaker. Audio can be sent from VK-Lite Viewer to a speaker. Only the administrator can access this terminal.

Output terminal: Φ 3.5-mm mini jack (monaural)

- Output level: 1 Vp-p max.

* Use a speaker with amplifier.

**Note**

- Switch the LINE IN/MIC IN setting on the Setting page according to the microphone specification ("Audio Input" in *Operation Guide*).
If a wrong input is used, the camera or microphone may be damaged. Be sure to set the correct input.
- The volume, sound quality, etc., may change depending on the characteristics of the microphone used.
- To send audio to speaker, use VK-Lite Viewer. Audio cannot be sent from VB-C500 Viewer (→ P. 1-9).
- Video and audio may sometimes lose synchronism.
- Audio may be interrupted depending on the performance of the PC used or the network environment.
- Video and audio can be transmitted to a maximum of 30 clients. If there are too many clients, audio may be interrupted.
- If anti-virus software is used, audio may be interrupted.
- Disconnecting/connecting the LAN cable interrupts the audio. Accordingly, reconnect the LAN connection on the viewer side.

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